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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

JAN 25 1980

Docket No: 50-364

Mr. Alan R. Barton
Senior Vice President
Alabama Power Company
600 North 18th Street
Birmingham, Alabama 35291

Dear Mr. Barton:

SUBJECT: REQUEST FOR ADDITIONAL INFORMATION FOR FARLEY 2 OPERATING LICENSE APPLICATION

As a result of our continuing review of the operating license application for the Joseph M. Farley Nuclear Plant Unit 2, we have developed the enclosed request for additional information.

Please provide the information requested in the enclosure. Our review schedule is based on the assumption that the additional information will be available for our review by March 15, 1980. If you cannot meet this date, please inform us within 7 days after receipt of this letter so that we may revise our scheduling.

Sincerely,

John F. Stolz, Chief
Light Water Reactors Branch No. 1
Division of Project Management

Enclosure:
Request for Additional
Information

cc:
See next page

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Mr. F. L. Clayton, Jr.

cc: Mr. Alan R. Barton
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ENCLOSURE

REQUESTS FOR ADDITIONAL INFORMATION
JOSEPH M. FARLEY NUCLEAR PLANT UNIT 2
DOCKET NO. 50-364

Requests from the following branches in NRC are included in this enclosure. Requests and pages are numbered sequentially with respect to requests transmitted following issuance of SER Supplement No. 3.

Branch	Page No.
Mechanical Engineering Branch	110-1 to 110-15

110.0 MECHANICAL ENGINEERING BRANCH

110.1 (3.9.6) 10CFR50.55a has recently been revised with respect to pump and valve inservice testing requirements. (See the October 9, 1979, Federal Register, pp. 57912-4.) Provide a program for the preservice testing and initial 120 month inservice testing of pumps and valves, as requiredby 10CFR50.55a(g)(2) for preservice testing and (g)(4)(i) for the initial 120 month period. Since inservice testing requirements were not included in the Code until the Summer 1973 Addenda of the 1971 edition, which is later than the CP date for Farley 2, you have the option of meeting that edition and addenda or later ones to the extent practical for your preservice program. The applicable Code for your initial 120 month inspection interval which would be required by 10CFR50.55a(g)(4)(i) is the Code endorsed by 10CFR50.55a(b)(2) 12 months prior to the date of issuance of your OL. Until November 1, 1979, the latest endorsed version of Section XI was the 1974 Edition through the Summer 1975 Addenda. However, effective November 1, 1979, 10CFR50.55a(b)(2) endorsed the 1977 Edition with all addenda through Summer 1978. With the current uncertainty in estimating whether your OL date will be before or after November 1, 1980, it is difficult to determine which Code addenda would be required by 10CFR50.55a(g)(4)(i). We therefore recommend that you base your initial 120 month inservice testing program on the 1977 Edition with all addenda through Summer 1978 as permitted by 10CFR50.55a(g)(4)(iv). Your preservice and initial 120 month interval programs should indicate which Code requirements are impractical to meet together with documentation for justification why relief is necessary.

The attached format should be used when submitting your IST program.

NRC STAFF COMMENTS ON INSERVICE PUMP AND VALVE TESTING PROGRAMS AND RELIEF REQUESTS

The NRC staff, after reviewing a number of pump and valve testing programs, has determined that further guidance might be helpful to illustrate the type and extent of information we feel is necessary to expedite the review of these programs. We feel that the Licensee can, by incorporating these guidelines into each program submittal, reduce considerably the staff's review time and time spent by the Licensee in responding to NRC staff requests for additional information.

The pump testing program should include all safety related* Class 1, 2, and 3 pumps which are installed in water cooled nuclear power plants and which are provided with an emergency power source.

The valve testing program should include all the safety related valves in the following systems excluding valves used for operating convenience only, such as manual vent, drain, instrument, and test valves, and valves used for maintenance only.

PWR

a. High Pressure Injection System
b. Low Pressure Injection System
c. Accumulator Systems
d. Containment Spray System

*Safety related - necessary to safely shut down the plant and mitigate the consequences of an accident.

e. Primary and Secondary System Safety and Relief Valves

f. Auxiliary Feedwater Systems

g. Reactor Building Cooling System

h. Active Components in Service Water and Instrument Air Systems which are required to support safety system functions.

i. Containment Isolation Valves required to change position to isolate containment.

j. Chemical & Volume Control System

k. Other key components in Auxiliary Systems which are required to directly support plant shutdown or safety system function.

l. Residual Heat Removal System

m. Reactor Coolant System

BWR

a. High Pressure Core Injection System

b. Low Pressure Core Injection System

c. Residual Heat Removal System (Shutdown Cooling System)

d. Emergency Condenser System (Isolation Condenser System)

e. Low Pressure Core Spray System

f. Containment Spray System

g. Safety, Relief, and Safety/Relief Valves

h. RCIC (Reactor Core Isolation Cooling) System

i. Containment Cooling System

j. Containment isolation valves required to change position to isolate containment.

k. Standby liquid control system (Boron System)

l. Automatic Depressurization System (any pilot or control valves, associated hydraulic or pneumatic systems, etc.)

m. Control Rod Drive Hydraulic System ("Scram" function)

n. other key components in Auxiliary Systems which are required to directly support plant shutdown or safety system function.

o. Reactor Coolant System

Inservice Pump and Valve Testing Program

I. Information required for NRC Staff Review of the Pump and Valve Testing Program

A. Three sets of P&ID's, which include all of the systems listed above, with the code class and system boundaries clearly marked. The drawings should include all of the components present at the time of submittal and a legend of the P&ID symbols.

B. Identification of the applicable ASME Code Edition and Addenda

C. The period for which the program is applicable.

D. Identify the component code class.

E. For Pump testing: Identify

1. Each pump required to be tested (name and number)

2. The test parameters to be measured

3. The test frequency

F. For valve testing: Identify

1. Each valve in ASME Section XI Categories A & B that will be exercised every three months during normal plant operation (indicate whether partial or full stroke exercise, and for power operated valves list the limiting value for stroke time.)

2. Each valve in ASME Section XI Category A that will be leak tested during refueling outages (Indicate the leak test procedure you intend to use)

3. Each valve in ASME Section XI Categories C, D, and E that will be tested, the type of test and the test frequency. For check valves, identify those that will be exercised every 3 months and those that will only be exercised during cold shutdown or refueling outages.

II. Additional Information that will be Helpful in Speeding Up the Review Process

A. Include the valve location coordinates or other appropriate location information which will expedite our locating the valves on the P&IDs.

B. Provide P&ID drawings that are large and clear enough to be read easily.

C. Identify valves that are provided with an interlock to other components and a brief description of that function.

Relief Requests from Section XI Requirements

The largest area of concern for the NRC staff, in the review of an inservice valve and pump testing program, is in evaluating the basis for justifying relief from Section XI Requirements. It has been our experience that many requests for relief, submitted in these programs, do not provide adequate descriptive and detailed technical information. This explicit information is necessary to provide reasonable assurance that the burden imposed on the licensee in complying with the code requirements is not justified by the increased level of safety obtained.

Relief requests which are submitted with a justification such as "Impractical", "Inaccessible", or any other categorical basis, will require additional information, as illustrated in the enclosed examples, to allow our staff to make an evaluation of that relief request. The intention of this guidance is to illustrate the content and extent of information required by the NRC staff, in the request for relief, to make a proper evaluation and adequately document the basis for that relief in our safety evaluation report. The NRC staff feels that by receiving this information in the program submittal, subsequent requests for additional information and delays in completing our review can be considerably reduced or eliminated.

I. Information Required for NRC Review of Relief Requests

A. Identify component for which relief is requested:

1. Name and number as given in FSAR
2. Function
3. ASME Section III Code Class
4. For valve testing, also specify the ASME Section XI valve category as defined in IWV-2000

B. Specifically identify the ASME Code requirement that has been determined to be impractical for each component.

C. Provide information to support the determination that the requirement in (B) is impractical; i.e., state and explain the basis for requesting relief.

D. Specify the inservice testing that will be performed in lieu of the ASME Code Section XI requirements.

E. Provide the schedule for implementation of the procedure(s) in (D).

II. Examples to Illustrate Several Possible Areas Where Relief May Be Granted and the Extent and Content of Information Necessary to Make An Evaluation

A. Accessibility: The regulation specifically grants relief from the code requirement because of insufficient access provisions. However, a detailed discussion of actual physical arrangement of the component in question to illustrate the insufficiency of space for conducting the required test is necessary.

Discuss in detail the physical arrangement of the component in question to demonstrate that there is not sufficient space to perform the code required inservice testing.

What alternative surveillance means which will provide an acceptable level of safety have you considered and why are these means not feasible?

B. Environmental Conditions (e.g., High radiation level, High temperature, High humidity, etc.)

Although it is prudent to maintain occupation radiation exposure for inspection personnel as low as practicable, the request for relief from the code requirements cannot be granted solely on the basis of high radiation levels alone. A balanced judgment between the hardships and compensating increase in the level of safety should be carefully established. If the health and safety of the public dictates the necessity of inservice testing, alternative means or even decontamination of the plant if necessary should be provided or developed.

Provide additional information regarding the radiation levels at the required test location. What alternative testing techniques which will provide an acceptable level of assurance of the integrity of the component in question have you considered and why are these techniques determined to be impractical?

C. Instrumentation is not originally provided

Provide information to justify that compliance with the code requirements would result in undue burden or hardships without a compensating increase in the level of plant safety. What alternative testing methods which will provide an acceptable level of safety have you considered and why are these methods determined to be impractical?

D. Valve Cycling During Plant Operation Could Put the Plant in an Unsafe Condition

The licensee should explain in detail why exercising tests during plant operation could jeopardize the plant safety.

E. Valve Testing at Cold Shutdown or Refueling Intervals in Lieu of the 3 Month Required Interval

The licensee should explain in detail why each valve cannot be exercised during normal operation. Also, for the valves where a refueling interval is indicated, explain in detail why each valve cannot be exercised during cold shutdown intervals.

III. Acceptance Criteria for Relief Request

The Licensee must sucessfully demonstrate that:

1. Compliance with the code requirements would result in hardships or unusual difficulties without a compensating increase in the level of safety and noncompliance will provide an acceptable level of quality and safety, or

2. Proposed alternatives to the code requirements or portions thereof will provide an acceptable level of quality and safety.

Standard Format

A standard format, for the valve portion of the pump and valve testing program and relief requests, is included as an attachment to this Guidance. The NRC staff believes that this standard format will reduce the time spent by both the staff in our review and by the licensee in their preparation of the pump and valve testing program and submittals. The standard format includes examples of relief requests which are intended to illustrate the application of the standard format and are not necessarily a specific plant relief request.

ATTACHMENT

STANDARD FORMAT

VALVE INSERVICE TESTING PROGRAM SUBMITTAL

Valve Number	Class	Coordinates	Valve Category A	B	C	D	E	Size (inches)	Valve Type	Actuator Type	Normal Position	Test Requirements	Relief Requests*	Testing Alternative	REMARKS (Not to be used for relief basis)
710	3	D-14					X	4	GA	M	LO	ET			
700	3	D-15				X		6	DE	NA	C	DT			
717	3	C-15			X			16	CK	SA	-	CV	X	CS	
702C	3	C-15			X			16	CK	SA	-	CV			
707	3	E-14			X			3	REL	SA	-	CV			
834	3	D-11		X			X	4	GL	M	C	Q	X	ET	
												MT			60 sec.
722B	3	B-11			X			3/4	REL	SA	-	SRV			
722C	3	B-11			X			3/4	REL	SA	-	SRV			
715	2	A-10			X			3	REL	SA	-	SRV			
729	2	B-10			X			3	REL	SA	-	SRV			
744B	2	D-14	X					10	GA	MO	C	Q			
												LT	X		
												MT			30 sec.

Legend for Valve Testing Example Format

Q - Exercise valve (full stroke) for operability every (3) months

LT - Valves are leak tested per Section XI Article IWV-3420

MT - Stroke time measurements are taken and compared to the stroke time limiting value per Section XI Article IWV 3410

CV - Exercise check valves to the position required to fulfill their function every (3) months

SRV - Safety and relief valves are tested per Section XI Article IWV-3510

DT - Test category D valves per Section XI Article IWV-3600

ET - Verify and record valve position before operations are performed and after operations are completed, and verify that valve is locked or sealed.

CS - Exercise valve for operability every cold shutdown

RR - Exercise valve for operability every reactor refueling

Relief Request Basis

System: Auxiliary Coolant System, Component Cooling

1. Valve: 717

   Category: C

   Class: 3

   Function: Prevent backflow from the reactor coolant pump cooling coils

   Impractical test requirement: Exercise valve for operability every three months

   Basis for relief: To test this valve would require interruption of cooling water to the reactor coolant pumps motor cooling coils. This action could result in damage to the reactor coolant pumps and thus place the plant in an unsafe mode of operation.

   Alternative Testing: This valve will be exercised for operability during cold shutdowns.

2. Valve: 834

   Category: B-E

   Class: 3

   Function: Isolate the primary water from the component cooling surge tank during plant opertion. It is normally in the closed position, but routine operation of this valve will occur during refueling and cold shutdowns.

   Impractical Test Requirement: Exercise valve (full stroke) for operability every three (3) months.

Basis for Relief: This valve is not required to change position during plant operation to accomplish its safety function. Exercising this valve will increase the possibility of surge tank line contamination.

Alternate Testing: Verify and record valve position before and after each valve operation.

3. Valve: 744B

Category: A

Class: 2

Function: Isolate the residual heat exchangers from the cold leg R.C.S. backflow and accumulator backflow.

Test Requirements: Seat leakage test

Basis for Relief: This valve is located in a high radiation field (2000 mr/hr) which would make the required seat leakage test hazardous to test personnel. We intend to seat leak test two other valves (875B and 876B) which are in series with this valve and will also prevent backflow. We feel that by complying with the seat leakage requirements we will not achieve a compensatory increase in the level of safety.

Alternative Testing: No alternative seat leak testing is proposed.